right-of-way of either a hard surfaced road, a highway, a public street, or a railroad;

(3) Is supported by a vehicular, pedestrian, railroad, or pipeline bridge; or

(4) Is used in a fabricated assembly, (including separators, mainline valve assemblies, cross-connections, and river crossing headers) or is used within five pipe diameters in any direction from the last fitting of a fabricated assembly, other than a transition piece or an elbow used in place of a pipe bend which is not associated with a fabricated assembly.

(c) For Class 2 locations, a design factor of 0.50, or less, must be used in the design formula in §192.105 for uncased steel pipe that crosses the right-of-way of a hard surfaced road, a highway, a public street, or a railroad.

(d) For Class 1 and Class 2 locations, a design factor of 0.50, or less, must be used in the design formula in §192.105 for—

(1) Steel pipe in a compressor station, regulating station, or measuring station; and

(2) Steel pipe, including a pipe riser, on a platform located offshore or in inland navigable waters.

[35 FR 13257, Aug. 19, 1970, as amended by Amdt. 192–27, 41 FR 34605, Aug. 16, 1976]

### §192.113 Longitudinal joint factor (*E*) for steel pipe.

The longitudinal joint factor to be used in the design formula in §192.105 is determined in accordance with the following table:

| Specification | Pipe class | Longitudinal joint factor (E) |
|---|---|---|
| ASTM A 53 | Seamless | 1.00 |
| | Electric resistance welded | 1.00 |
| | Furnace butt welded | .60 |
| ASTM A 106 | Seamless | 1.00 |
| ASTM A 333/A 333M. | Seamless | 1.00 |
| | Electric resistance welded | 1.00 |
| ASTM A 381 | Double submerged arc welded | 1.00 |
| ASTM A 671 | Electric-fusion-welded | 1.00 |
| ASTM A 672 | Electric-fusion-welded | 1.00 |
| ASTM A 691 | Electric-fusion-welded | 1.00 |
| API 5 L | Seamless | 1.00 |
| | Electric resistance welded | 1.00 |
| | Electric flash welded | 1.00 |
| | Submerged arc welded | 1.00 |
| | Furnace butt welded | .60 |
| Other | Pipe over 4 inches | .80 |
| Other | Pipe 4 inches or less | .60 |

If the type of longitudinal joint cannot be determined, the joint factor to be used must not exceed that designated for ''Other.''

[Amdt. 192–37, 46 FR 10159, Feb. 2, 1981, as amended by Amdt. 192–51, 51 FR 15335, Apr. 23, 1986; Amdt. 192–62, 54 FR 5627, Feb. 6, 1989; 58 FR 14521, Mar. 18, 1993]

### §192.115 Temperature derating factor (*T*) for steel pipe.

The temperature derating factor to be used in the design formula in §192.105 is determined as follows:

| Gas temperature in degrees Fahrenheit | Temperature derating factor (T) |
|---|---|
| 250 or less | 1.000 |
| 300 | 0.967 |
| 350 | 0.933 |
| 400 | 0.900 |
| 450 | 0.867 |

For intermediate gas temperatures, the derating factor is determined by interpolation.

### §192.117 [Reserved]

### §192.119 [Reserved]

### §192.121 Design of plastic pipe.

Subject to the limitations of §192.123, the design pressure for plastic pipe is determined in accordance with either of the following formulas:

$$P = 2S\frac{t}{(D-t)}0.32$$

$$P = \frac{2S}{(SDR-1)}0.32$$

Where:

P=Design pressure, gauge, kPa (psig).

S=For thermoplastic pipe, the long-term hydrostatic strength determined in accordance with the listed specification at a temperature equal to 23°C (73°F), 38°C (100°F),